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Psychological resilience during the perimenopause

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Highlights

- The experience of the perimenopause is influenced by psychological resilience factors.
- High resilience buffers the perception of menopausal symptoms.
- To better understand women's menopausal transition, the interplay between menopausal symptoms, resilience factors, and coping with symptoms has to be taken into account.

Abstract

The menopausal transition is a critical phase for psychological disorders such as depression and anxiety, with prevalence rates of depression ranging up to 20% during the menopause. Nevertheless, the majority of women cope adequately with this reproductive transition phase and thus appear to be resilient. We assert that a variety of psychological factors influence the menopausal transition and result in an individual state on a continuum from successful

adjustment to maladjustment. The purpose of this review is to offer a conceptual framework of resilience factors during the menopausal transition and to reveal which dimensions of resilience have already been verified for a healthy menopausal transition.

We searched the databases PubMed and PsycINFO for studies investigating resilience factors during the menopausal transition which influence psychological and physical adjustment or maladjustment. A total of 23 articles were included.

Altogether, we identified 15 different resilience factors, assessed with 23 different questionnaires. These factors can be grouped into six categories: core resilience, spirituality, control, optimism, emotion and self-related resilience. They are associated with a better adjustment to menopausal symptoms, milder physical symptoms, a better quality of and satisfaction with life, better well-being, less perceived stress and fewer depressive symptoms compared with women with lower levels of the respective resilience factors.

Our conceptual framework includes resilience factors which have already been verified by empirical data. Further research is needed to determine whether these resilience factors can be assigned to a common factor and to incorporate biological resilience markers.

Keywords: resilience; perimenopause; adjustment; maladjustment

1. Introduction

The perimenopause describes the phase of transition from regular menstruation to its cessation. It is characterized by physical and emotional changes and is determined by biological, psychological and socio-cultural aspects within the aging process [1,2]. During this transition, women often report psychological, somatic, vasomotor, and urogenital

symptoms [3,4]. Up to 70% of all women experience symptoms such as hot flushes, night sweats or sleep disturbances [5]. Besides physical symptoms, the menopausal transition is a critical phase for psychological disorders such as depression and anxiety [6–11].

Although depressive symptoms during the menopausal transition cannot be attributed directly to the reproductive status [12], women with a depressive episode earlier in life show a higher risk for the recurrence of depressive symptoms during the perimenopause [13–15]. However, even women who have been mentally healthy throughout their life may experience negative mood states through to depression during this phase [10,11,16,17].

Prevalence rates of depression during the menopause lie at up to 20 % [8]. This means that the majority of women experience no clinically significant mood disturbances during this transition phase. These women adjust to the transition and show a high quality of life and well-being and seem to be resilient to negative effects of the perimenopause [18,19]. Resilience is defined as the capability to successfully withstand, adapt or recover from significant stress and adversity [20–22]. Cutuli and Masten [20] defined three aspects of resilience: first, functioning well during a time of significant adversity, i.e. stress resistance; second, returning to a previous level of good functioning following a severely disturbing or traumatic experience, termed “bouncing back”; and third, achieving new levels of positive or normal adaptation when severely adverse conditions improve, i.e. normalization. These three circumstances can be transferred to the end of a woman’s fertile life phase. Besides biological changes, the menopausal transition is often accompanied by stress and adversity. The perimenopause not only marks the end of women’s fertility, but takes place during a time that is already accompanied by various family, social and professional changes [23]. Stress-resistant women who remain mentally healthy despite adversity, for instance in the case of menopausal symptoms, marital tensions or declining health, are considered as resilient [24]. Similarly, women who bounce back to a previous level of good functioning after a disturbing life experience such as divorce or serious illness are also defined as resilient. The menopausal

transition might co-occur with changes in social roles, such as children leaving home or the birth of grandchildren [25,26]. Moreover, reaching midlife often triggers a process of stock-taking, in which one's current situation is compared with one's original life goals [23]. This may lead to a new orientation regarding life goals, such as professional reorientation or reevaluation of relationships [25]. Women who achieve new levels of positive adaptation or normalization to the reorientation when adverse conditions improve can be described as resilient.

We claim that specific resilience factors are related to the perception of and coping with perimenopausal symptoms, resulting in (mal)adjustment. A conceptual framework describing the complex interplay between symptoms of the menopausal transition, resilience factors, symptom coping and the resulting state of adjustment or maladjustment to perimenopausal symptoms is provided in Fig. 1.

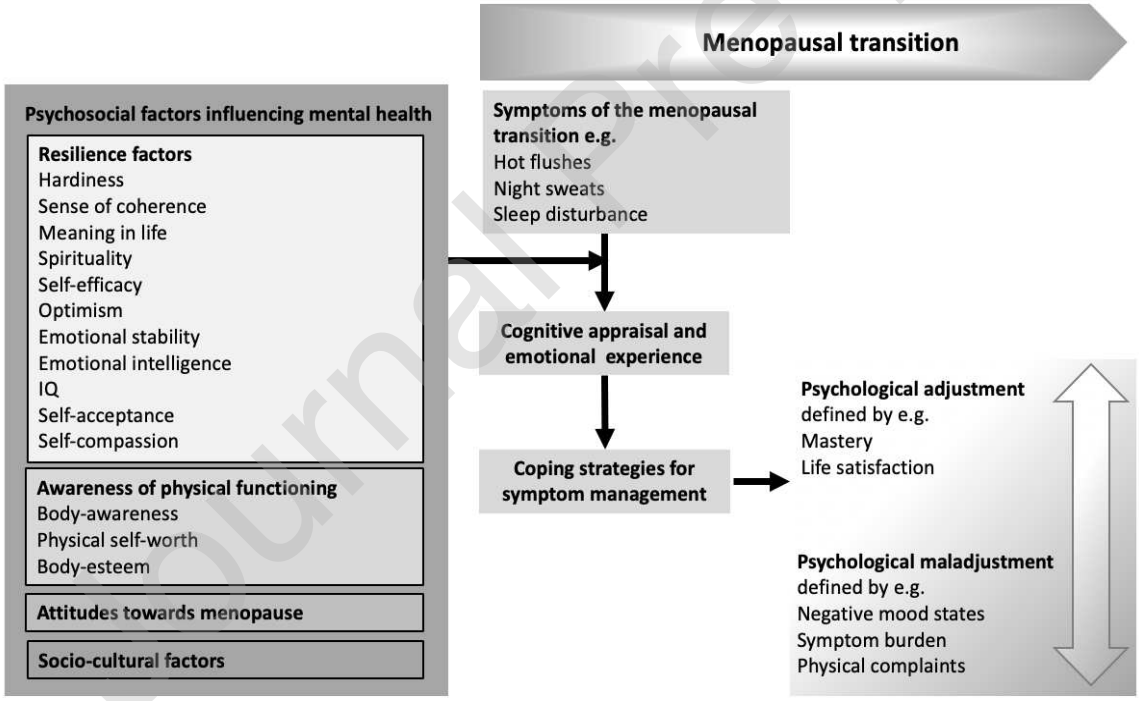

Fig. 1. Resilience factors during the menopausal transition

Current research encompasses a variety of psychological concepts describing different aspects of resilience. Core concepts are represented in our framework and are characterized

for a better understanding of why these resilience factors play an important role during the perimenopause.

Hardiness and sense of coherence have been reported as beneficial to health outcomes during the menopause [27]. Moreover, meaning in life [28,29] and spirituality [25] can provide strength and comfort, and both concepts are related to a better health-related quality of life and decreased menopausal symptoms compared to women with lower spirituality or less meaning in life. Maintaining a role or having goals helps people to experience life as meaningful [30]. Consequently, self-efficacy seems to be an important resilience factor during the perimenopause [28]. Higher levels of optimism have also been linked to reports of fewer symptoms in perimenopausal women [27,31]. In this respect, Elavsky and McAuley [31] suggested that optimism influences the shaping of cognitive schemata, leading to differences in the awareness and reporting of menopausal symptoms. Regarding mental and physical health outcomes, emotional stability [27] and emotional intelligence [32,33] seem to be significant resilience factors during the end of a woman's fertile life phase. Coronado et al. [34] showed that general intelligence, as defined by a higher educational level, was related to higher resilience in middle-aged women compared to those with a lower educational level. Therefore, we assume that general intelligence influences women's cognitive appraisal and emotional experience of menopausal symptoms and may indirectly act as a resilience factor. Additionally, we claim that self-acceptance and self-compassion play an important role as resilience factors during the perimenopause. Self-acceptance decreases over the course of life, and menopause is considered as a high-risk life event in this regard [35], but women with high self-acceptance perceived low stress levels during this phase of life [29]. Self-compassion includes experiencing feelings of kindness toward oneself and having an understanding and a nonjudgmental attitude toward one's own inadequacies [36]. It is a key predictor of mental health and can mitigate the influence of shameful experiences, failure and rejection [37]. Moreover, it is a predictor of well-being, life satisfaction and emotional

balance [38]. In sum, the depicted studies form the basis for including hardiness, sense of coherence, meaning in life, spirituality, self-efficacy, optimism, emotional stability, emotional intelligence, general intelligence, self-acceptance and self-compassion as resilience factors into our conceptual framework.

Based on the recent literature we assume that in addition to the mentioned resilience factors, awareness of physical functioning [31,39], attitudes towards menopause [40] and socio-cultural factors [5] support women's cognitive appraisal and emotional experience of menopausal symptoms. Some authors pointed out that coping strategies play a crucial role as a moderator between psychosocial factors and adaptation during the menopausal transition [27,41,42]. Therefore, we propose that cognitive appraisal and emotional experience influence the coping strategies employed for symptom adjustment in perimenopausal women. Regarding these coping strategies, the adaptation to perimenopausal symptoms lies on a continuum from adjustment, which is defined by life satisfaction and well-being, to maladjustment, which includes negative mood states, symptom burden and physical complaints [27,33,41,42].

As described in our model, we assume that resilience plays an important role in women's cognitive appraisal and emotional experience of menopausal symptoms, resulting in an individual state of successful adjustment or maladjustment. The purpose of this review is to show which dimensions of our conceptual framework have already been verified by empirical data. First, we review the characteristics of the included studies that examined resilience factors during the menopausal transition. Second, we outline which measures were used to assess resilience factors across the implemented studies. Third, we examine the extent to which the associations between these resilience factors and measures of psychological (mal)adjustment during the menopausal transition have already been addressed in previous studies.

2. Method

2.1 Search strategy

We conducted a systematic literature search of the databases PubMed and PsycINFO to identify relevant articles up to August 2018. Keywords and subject headings were combined, corresponding with the respective database thesaurus. The search string consisted of two components: (a) "perimenopause" and synonyms, and (b) "resilience" and related terms. All searches were restricted to studies conducted in humans and published in English.

2.2 Screening and study selection procedure

The following inclusion criteria were applied for the identified articles: (a) women in the stage of menopausal transition and (b) resilience factors (i.e. sense of coherence, hardiness, self-compassion, optimism) influencing psychological adjustment or maladjustment. For the selection of eligibility, a full-text reading of all remaining articles was performed. This was followed by a search for additional articles within the reference section of the included articles.

2.3 Data extraction

Included articles were examined for information about the first author, year of publication, sample size and age of the study participants, study design, menopausal status of the study participants, country of study implementation, and instruments used for the assessment of resilience factors and for the measurement of (mal)adjustment. Due to heterogeneity, it was not possible to conduct a meta-analysis, as there were no two studies with the same resilience and outcome measurements.

3. Results

3.1 Search results

The search for "perimenopause" and synonyms, and "resilience" and synonyms yielded 67 articles on PubMed and 51 on PsycINFO. After duplicates had been removed, according to the inclusion criteria, 23 articles were considered to be relevant for the present research question and were eligible for data extraction.

3.2 Study characteristics

Table 1 shows the characteristics of the studies. These comprised seven longitudinal studies and 16 cross-sectional studies, amounting altogether to 4828 participants aged from 30 to 70 years. Three studies focused on perimenopausal women only. The authors of three studies explicitly stated that they also included women with a history of surgical menopause. In one study, the authors examined breast cancer survivors with menopausal symptoms, with 90% of women receiving anti-estrogen medication.

Table 1
Characteristics of included studies that examined resilience factors during the menopausal transition.

Ref. NO.	Author	Sample	Study Design	Menopausal Status	Country	Measures of resilience factors	Measures of adjustment or maladjustment
[29]	Abdelrahman et al. (2014)	193 women aged 40 – 55 years	Cross-sectional	69.4 % premenopausal 18.1 % perimenopausal 12.4 % postmenopausal	Jordan	Psychological Well-Being Inventory (PWI): Purpose in Life and Self-Acceptance	Perceived Stress Scale (PSS)
[43]	Barbee & Timmerman (2015)	43 healthy women aged 40 – 59 years	Cross-sectional	100% perimenopausal	USA	Self-Efficacy for Eating Behaviors Scale (SEEB)	Binge Eating Scale (BES)
[33]	Bauld & Brown (2009)	116 women aged 45 – 55 years	Cross-sectional	39% perimenopausal 25% menopausal 30% naturally postmenopausal 6% surgically postmenopausal	Australia	Assessing Emotions Scale (AES): Emotional Intelligence	Menopause Rating Scale (MRS) Short-Form Health Survey (SF-36)
[41]	Bosworth et al. (2003)	170 women aged 45 – 54	Cross-sectional	46% close to start menopause 47% perimenopausal 7% postmenopausal	USA	NEO Five-Factor Inventory (NEO-FFI): Emotional Stability	Menopausal Stress on a Scale of 1 to 10
[15]	Bromberger et al. (2015)	443 women aged 42 – 52 years	Prospective	At study entry: ~ 50% premenopausal ~ 50% early perimenopausal	USA	Self-Consciousness Scale (SCS-R) Life Orientation Test (LOT-R): Optimism	Centre for Epidemiological Studies Depression Scale (CES-D)
[38]	Brown et al. (2014)	206 women aged 40 – 60 currently experiencing hot flushes and/or night sweats	Cross-sectional	14.6% premenopausal 12.6% perimenopausal 60.2% naturally postmenopausal 11.2% surgically postmenopausal	Australia	Self-Compassion Scale (SCS)	Centre for Epidemiological Studies Depression Scale (CES-D) Hot flush interference (10-item scale)
[44]	Brown et al. (2015)	206 women aged 40 – 60 currently experiencing hot flushes and/or night sweats	Cross-sectional	14.6% premenopausal 12.6% perimenopausal 60.2% naturally postmenopausal 11.2% surgically postmenopausal	Australia	Self-Compassion Scale (SCS)	Warwick–Edinburgh mental well-being scale (WEMWBS) Satisfaction with life scale (SWLS) Positive and Negative Affect Schedule (PANAS)

Table 1 *(Continued)*

Ref. NO.	Author	Sample	Study Design	Menopausal Status	Country	Measures of resilience factors	Measures of adjustment or maladjustment
[27]	Caltabiano & Holzheimer (1999)	176 women aged 50 – 60 years	Cross-sectional	Perimenopausal Postmenopausal	Australia	Health-Related Hardiness (HRH) Life Orientation Test (LOT-R): Optimism Orientation to Life Questionnaire (OLQ): Sense of Coherence NEO Five-Factor Inventory (NEO-FFI): Emotional Stability	Menopausal adaptation checklist of 28 physical and psychological symptoms commonly attributed to the climacteric
[19]	Chedraui et al. (2012)	904 women aged 40 – 59	Cross-sectional	26.5% premenopausal 22.3% perimenopausal 51.1% postmenopausal	Ecuador	Young Resilience Scale (WYRS-14)	Several lifestyle and health factors
[34]	Coronado et al. (2015)	227 women aged 40 – 65 years	Cross-sectional	26.9% premenopausal 20.3% perimenopausal 52.9% postmenopausal	Spain	Young Resilience Scale (WYRS-14)	ICD-10 diagnosis of depression Menopause Rating Scale (MRS)
[31]	Elavsky & McAuley (2009)	164 sedentary or low active women aged 42 – 58 years	Prospective	17% premenopausal 51% perimenopausal 32% postmenopausal No history of surgical menopause	USA	Life Orientation Test (LOT-R): Optimism	Greene Climacteric Scale (GCS)
[32]	Extremera & Fernández-Berrocal (2002)	99 women aged Ø 50.7 years	Cross-sectional	52.13% premenopausal 47.87% postmenopausal	Spain	Trait Meta-Mood Scale (TMMS): Emotional Intelligence	Short Form Health Survey (SF-36)
[45]	Guérin (2017)	102 healthy women aged 47 – 55 years	Prospective	At year 2: 36.5% premenopausal 62.5% perimenopausal 1.0% postmenopausal	Austria	Rosenberg Self-Esteem Scale (RSE)	Three subscales of the Profile of Mood States-short form (POMS-SF): Vigor, Depression, Tension Perceived Stress Scale (PSS)
[28]	Jafary et al. (2011)	349 women aged 45 – 55 years	Cross-sectional	100% perimenopausal	Iran	Meaning in Life Questionnaire (MLQ) Sherer General Self-Efficacy Scale (SGSES)	Short Form Health Survey (SF-36)
[46]	Klohnen et al. (1996)	208 women assessed at ages 43, 48 and 52	Prospective	By age 52: 76% postmenopausal	USA	The California Adult Q-set Ego-Resiliency (CAQ) California Psychological Inventory Ego-Resiliency (CPI)	Psychological well-being (Adjective Check List) Indicators of physical health

Table 1 *(Continued)*

Ref. NO.	Author	Sample	Study Design	Menopausal Status	Country	Measures of resilience factors	Measures of adjustment or maladjustment
[47]	Koch et al. (2017)	40 women aged 30 – 65 years, breast cancer survivors	Prospective	Suffering from menopausal symptoms 90% received anti-estrogen medication	Germany	Rosenberg Self-Esteem Scale (RSE)	Functional Assessment of Cancer Therapy-Breast (cancer-specific quality of life; FACT-B) Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) Menopause Rating Scale (MRS)
[48]	Mauas et al. (2014)	376 healthy women aged 35 – 60 years	Cross-sectional	27.1% premenopausal 24.6% early perimenopausal 17.4% late perimenopausal 30.9% postmenopausal	Austria	The Depressive Experiences Questionnaire (DEQ): Self-Criticism Born–Steiner Irritability Scale (BSIS) Difficulties in Emotional Regulation Scale (DERS)	Beck Depression Inventory II (BDI-II)
[49]	McAndrew et al. (2009)	280 women, mean age 52 years	Prospective	40.35 % reported symptoms attributed to menopause	USA	Exercise self-efficacy assessed with five questions	Menopause-Specific Quality of Life Questionnaire (MENQOL)
[50]	Reece & Harkless (2006)	147 Hispanic Caribbean and non-Hispanic white women aged 40 – 60 years	Cross-sectional	100 % perimenopausal	USA	Perimenopausal Health Self-Efficacy Survey (PHS-ES)	Self-Perceived Functional Health (COOP)
[51]	Reynolds (2002)	55 women aged 40 – 60 years	Cross-sectional	Reported menopausal hot flushes	GB	Rosenberg Self-Esteem Scale (RSE)	Flush Self-Image Scale (FSIS)
[52]	Smith-DiJulio et al. (2008)	334 healthy women aged 35 – 55 years	Prospective	Late reproductive phase perimenopausal postmenopausal	USA	Pearlin Mastery Scale (PM)	General Well-Being (GWB)
[25]	Steffen (2011)	218 religious women aged 45 – 70 years	Cross-sectional	35% premenopausal 26% perimenopausal 39% postmenopausal	USA	Functional Assessment in Chronic Illness Therapy-Spirituality expanded version (FACIT)	Women's Health Questionnaire (WHQ)
[53]	Zhang et al. (2016)	54 Mosuo women and 52 Han Chinese women aged 40 – 60 years	Cross-sectional	59.3% / 46.2% premenopausal 29.6% / 19.2% perimenopausal 11.1% / 34.6% postmenopausal	Germany	Rosenberg Self-Esteem Scale (RSE)	Menopause Rating Scale (MRS)

3.2 Resilience factors during the menopausal transition

Table 2 shows the assessed resilience factors within the included studies. Overall, a total of 23 different questionnaires were used to measure resilience factors across the implemented studies. The Rosenberg Self-Esteem Scale (RSE) was the most frequently employed questionnaire, utilized in four studies [45,47,51,53], followed by the Life Orientation Test (LOT-R), which was used three times [15,27,54]. The Young Resilience Scale (WYRS-14) [34,55] and the Self-Compassion Scale (SCS) [38,44] each appeared in two included studies, while all of the other instruments were used only once to measure one of the resilience factors during the menopausal transition.

Across the studies, a total of 15 different types of resilience factors were assessed, which can be grouped into six subcategories as shown in Table 2. The first subcategory includes the resilience factors hardiness [27], (ego-)resilience [19,34,46] and sense of coherence [27], and can be described as "Core resilience". For the second subcategory, meaning in life [28,29] and religiosity [25] can be combined into "Spirituality". The third subcategory is termed "Control", and encompasses self-efficacy [28, 44, 50, 51] and the related resilience factor mastery, which describes the extent to which people feel that their life chances are under their personal control [52]. The fourth subcategory concerns "Optimism", which was measured using the LOT-R in three studies [15,27,31]. The fifth subcategory, "Emotion", includes the two emotion-based resilience factors emotional intelligence [32, 33] and emotional stability [27,42, 49]. The sixth subcategory of resilience factors during the menopausal transition can be summarized as "Self-related resilience". This category encompasses self-acceptance [29], self-compassion [38,44], low self-criticism [48] self-esteem [45,47,51,53] and self-consciousness [15] as a resilience factor.

Table 2
Measures of resilience factors during the menopausal transition.

Subcategory	Resilience factor	Questionnaire	Author
Core resilience	Hardiness	Health-Related Hardiness (HRH)	Caltabiano & Holzheimer (1999)
	Resilience	The California Adult Q-set Ego-Resiliency (CAQ)	Klohnen et al. (1996)
		California Psychological Inventory Ego-Resiliency (CPI)	Klohnen et al. (1996)
		Young Resilience Scale (WYRS-14)	Chedraui et al. (2012) Coronado et al. (2015)
	Sense of coherence	Orientation to Life Questionnaire (OLQ)	Caltabiano & Holzheimer (1999)
Spirituality	Purpose in life	Psychological Well-Being Inventory (PWI): Purpose in Life	Abdelrahman et al. (2014)
	Meaning in life	Meaning in Life Questionnaire (MLQ)	Jafary et al. (2011)
	Religiosity	Functional Assessment in Chronic Illness Therapy-Spirituality expanded version (FACIT)	Steffen (2011)
Control	Self-efficacy	Sherer General Self-Efficacy Scale (SGSES)	Jafary et al. (2011)
		Self-Efficacy for Eating Behaviors Scale (SEEB)	Barbee & Timmerman (2015)
		Perimenopausal Health Self-Efficacy Survey (PHS-ES)	Reece & Harkless (2006)
		Exercise self-efficacy assessed with five questions	McAndrew et al. (2009)
	Mastery	Pearlin Mastery Scale (PM)	Smith-DiJulio et al. (2008)
Optimism	Optimism	Life Orientation Test (LOT-R)	Bromberger et al. (2015) Caltabiano & Holzheimer (1999) Elavsky & McAuley (2009)
Emotion	Emotional stability	NEO Five-Factor Inventory (NEO-FFI)	Bosworth et al. (2003) Caltabiano & Holzheimer (1999)
		Born-Steiner Irritability Scale (BSIS)	Bauld & Brown (2009)
		Difficulties in Emotional Regulation Scale (DERS)	Mauas et al. (2014)
	Emotional intelligence	Assessing Emotions Scale (AES)	Bauld & Brown (2009)
		Trait Meta-Mood Scale (TMMS)	Extremera & Fernández-Berrocal (2002)
Self-related resilience	Self-acceptance	Psychological Well-Being Inventory (PWI): Self-Acceptance	Abdelrahman et al. (2014)
	Self-compassion	Self-Compassion Scale (SCS)	Brown et al. (2014) Brown et al. (2015)
	Low self-criticism	The Depressive Experiences Questionnaire (DEQ): Self-Criticism	Mauas et al. (2014)
	Self-esteem	Rosenberg Self-Esteem Scale (RSE)	Guérin (2017) Koch et al. (2017) Reynolds (2002) Zhang et al. (2016)
	Self-consciousness	Self-Consciousness Scale (SCS-R)	Bromberger et al. (2015)

3.3. Psychological adjustment or maladjustment during the menopausal transition

Table 3 shows to which measure of menopausal adjustment or maladjustment the 15 assessed resilience factors were found to be related.

Women with high hardiness scores reported fewer menopausal symptoms than women with lower scores [27], while sense of coherence was found to exert a positive influence on adaptation during the menopause [27]. Lower total resilience scores correlated with more severe menopausal symptoms, depressive symptoms and higher abdominal circumferences, whereas higher resilience scores correlated with better psychological and physical well-being and with higher sexual activity [19,34,46].

Negative correlations emerged between purpose in life and perceived stress [29], while meaning in life correlated positively with health-related quality of life [28]. Similar results were found regarding religiosity: Higher levels of spiritual strength were related to a decreased number of reported menopausal symptoms [25].

General and perimenopausal health self-efficacy correlated with health-related quality of life [28,50]. Self-efficacy for eating behaviors did not significantly correlate with emotional eating, but there was a significant negative correlation between diet-related self-efficacy and binge-eating [43]. Physical activity self-efficacy mediated the relationship between physical activity and physical and psychosocial symptoms attributed to the menopause [49]. The related resilience factor mastery correlated with general well-being [52].

Optimism seems to have a positive effect on adaptation to menopausal symptoms [27,31], while low optimism correlated with depressive symptoms [15].

Women with high emotional intelligence scores experienced less severe menopausal symptoms [33] and better health-related quality of life [32,33] than women with low emotional intelligence. Emotional stability appeared to explain a reasonable amount of variance in adaptation to menopausal symptoms [27] and perceived menopausal stress [41],

while emotional irritability and emotional self-regulation were found to predict depressive symptoms [48].

Negative correlations were found between self-acceptance, self-esteem and perceived stress [29,45]. Self-consciousness, low self-criticism, self-compassion and self-esteem correlated with depressive symptoms [15,38,45,48]. Self-compassion also made a significant direct contribution to hot flush interference ratings [38] and predicted well-being, satisfaction with life and emotional balance [44]. Self-esteem appears to be a predictor of the severity of all menopausal symptoms [53] and of poorer attitudes towards the self during hot flushes [52]. Additionally, self-esteem mediated the effect of yoga on the severity of menopausal symptoms, quality of life, social well-being, emotional well-being, functional well-being and fatigue, but had no effect on somatovegetative menopausal symptoms or on physical well-being [47].

Table 3
Associations between resilience factors and measures of psychological adjustment or maladjustment during the menopausal transition.

Subcategory	Resilience factor	→	Measure of adjustment or maladjustment	Author
Core resilience	Hardiness	→	Number of physical and psychological menopausal symptoms	Caltabiano & Holzheimer (1999)
	Resilience	→	Abdominal circumference	Chedraui et al. (2012)
		→	Depressive symptoms	Coronado et al. (2015)
		→	Severity of menopausal symptoms	Chedraui et al. (2012), Coronado et al. (2015)
		→	Sexual activity	Chedraui et al. (2012)
		→	Well-being	Klohnen et al. (1996)
	Sense of coherence	→	Adaptation to menopausal symptoms	Caltabiano & Holzheimer (1999)
Spirituality	Meaning / Purpose in life	→	Health-related quality of life	Jafary et al. (2011)
		→	Perceived stress	Abdelrahman et al. (2014)
	Religiosity	→	Severity of menopausal symptoms	Steffen (2011)
Control	Self-efficacy	→	Binge eating	Barbee & Timmerman (2015)
		→	Health-related quality of life	Jafary et al. (2011), Reece & Harkless (2006)
		→	Severity of menopausal symptoms	McAndrew et al. (2009)
	Mastery	→	Well-being	Smith-DiJulio et al. (2008)
Optimism	Optimism	→	Adaptation to menopausal symptoms	Caltabiano & Holzheimer (1999), Elavsky & McAuley (2009)
		→	Depressive symptoms	Bromberger et al. (2015)
Emotion	Emotional stability	→	Adaptation to menopausal symptoms	Caltabiano & Holzheimer (1999)
		→	Depressive symptoms	Mauas et al. (2009)
		→	Perceived stress	Bosworth et al. (2003)
	Emotional intelligence	→	Health-related quality of life	Bauld & Brown (2009), Extremera & Fernández-Berrocal (2002)
		→	Severity of menopausal symptoms	Bauld & Brown (2009)
Self-related resilience	Self-acceptance / Self-compassion / Low self-criticism	→	Depressive symptoms	Brown et al. (2014), Mauas et al. (2009)
		→	Emotional balance	Brown et al. (2015)
		→	Hot flush interference	Brown et al. (2014)
		→	Perceived stress	Abdelrahman et al. (2014)
		→	Satisfaction with life	Brown et al. (2015)
		→	Well-being	Brown et al. (2015)
	Self-esteem / Self-consciousness	→	Depressive symptoms	Bromberger et al. (2015), Guérin (2017)
		→	Fatigue	Koch et al. (2017)
		→	Flush self-image	Reynolds (2002)
		→	Perceived stress	Guérin (2017)
		→	Severity of menopausal symptoms	Koch et al. (2017), Zhang et al. (2016)
		→	Quality of life	Koch et al. (2017)
		→	Well-being	Koch et al. (2017)

4. Discussion

A woman's experience of the menopausal transition is strongly affected by several resilience factors. According to the presented literature search, resilience factors can be grouped into six subcategories: core resilience, spirituality, control, optimism, emotion and self-related resilience.

Resilience seems to have a positive effect on the experience of menopausal symptoms, with higher resilience being associated with fewer and milder physical and psychological menopausal symptoms. Furthermore, it is related to a better adaptation to menopausal complaints, higher life satisfaction, better overall well-being, lower perceived stress and lower depressive symptoms, as well as other health and lifestyle factors.

Studies focusing on resilience factors during the perimenopause are rare. Nevertheless, according to the presented literature review, some authors have already examined the concept of resilience or selected resilience factors (e.g. self-esteem [46,48,52,54], optimism [15,27,55], self-compassion [39,45]) during the menopausal transition.

The resilience concept has often been criticized due to ambiguities in its definition and measurement [56–58]. Over the past decades, several questionnaires have been developed to assess psychological resilience factors [22]. Some of these measures refer to global resilience constructs such as sense of coherence [59] or hardiness [60]. Additionally, a number of more specific traits (e.g. self-esteem, optimism, self-efficacy) have commonly been associated with resilience, and for all of these, different questionnaires are available [22]. Accordingly, across the implemented studies, the measurement of resilience is heterogeneous in nature. A precise definition of the construct of resilience, and a greater homogeneity of the measurement instruments, would be desirable in order to improve the comparability of findings. Windle et al. [61] reviewed 15 resilience measurement scales and did not find a current 'gold standard'

for measuring resilience. Nevertheless, the Connor-Davidson Resilience Scale (CD- RISC), the Resilience Scale for Adults (RSA) and the Brief Resilience Scale received the best psychometric ratings [61]. To summarize, due to the heterogeneity of the resilience measurement scales, it was not possible to compare the study results. If greater comparability of results could be achieved in the future, the results could be generalized to a larger population and the statistical power to detect an effect may increase.

Some additional aspects should be taken into account when considering resilience factors during the perimenopause. Internationally, menopausal symptoms vary considerably [5,62,63], and there are global as well as socio-culturally specific aspects that contribute to resilience [64]. In our conceptual framework, we assume that socio-cultural factors influence women's cognitive appraisal and emotional experience of menopausal symptoms. In this process, socio-cultural attitudes regarding the end of reproductive life and aging seem to play a key role [5]. Furthermore, variations in the experience of menopausal symptoms in different ethnic groups might be due to differences in the perception and tolerance of symptoms (e.g. temperature changes) [63]. According to our model, cognitive appraisal and emotional experience influence the coping strategies employed for symptom adjustment. Therefore, cultural differences are also evident in the individual choice of coping strategies [65].

Furthermore to date, resilience factors have mostly been examined psychometrically, but recent research has sought to identify the biological underpinnings of resilience [66–68]. Interestingly, however, no studies have assessed such correlates for the perimenopause. The menopausal transition is characterized by an enhanced risk of depression compared to the subsequent years [11,69]. This implies that hormonal fluctuations affect these problems more than the adaptation to a much lower but stable level of hormonal activity [70]. In future studies, it would be interesting to investigate whether hormonal levels correlate with resilience measures. The fact that resilience can refer not only to stable characteristics (trait)

but also to situational factors (state) [71–75] begs the question of whether resilience factors differ in pre- and postmenopausal women.

With the exception of general intelligence, the resilience factors of our conceptual framework have already been verified by empirical data. Coronado et al. [34] showed that general intelligence, defined by a higher educational level, was associated with higher resilience. This raises the question of whether intellect contributes to resilience or whether education teaches resilience. Research suggests that resilience is not related to cognitive abilities in participants from the normal population, but is associated with cognitive abilities in participants with higher levels of adverse events [76,77]. Higher educational aspirations, by contrast, predicted resilience in both groups [76]. Accordingly, resilient individuals are not necessarily intellectually stronger, but due to a higher level of education, they seem to be more likely to be adept at effectively using their available skills to help them to cope [77,78].

The provided conceptual framework may help to describe the complex interplay between symptoms of the perimenopause, resilience factors, symptom coping and the resulting state of adjustment or maladjustment. Most dimensions of the conceptual framework have already been verified by empirical data. Interestingly, so far, only a small number of concepts have referred to the description of psychological factors influencing the experience of the perimenopause. Hunter and Chilcot [79] tested a cognitive model of menopausal hot flushes and night sweats. Their findings support the assumption that psychological factors such as anxiety and optimism influence the symptom perception and cognitive appraisal of hot flushes and night sweats [79]. Additionally, a higher educational level was associated with more positive beliefs about hot flushes and night sweats [79]. Caltabiano and Holzheimer [27] verified the psychological path model of the direct and indirect effects of optimism and hardiness on adaptation during the menopause via problem-focused coping. The similarity of these models to our proposed conceptual framework lies in the influence of psychological factors such as optimism, hardiness, low anxiety and intelligence on the adaptation to

menopausal symptoms via cognitive appraisal [79] or the coping strategy used for symptom management [27].

The informative value of this review is diminished due to the high heterogeneity of the resilience measures across the studies. Accordingly, several of the resilience factors mentioned were recorded only once in women during the menopausal transition. Since there are no two studies with the same resilience and outcome measurements, we were unable to conduct a meta-analysis. A better operationalization of resilience is therefore warranted.

Given the restricted number of suitable articles, a publication bias is probable. Moreover, since the published studies did not provide a full overview regarding data and methodology, a selection bias is also conceivable.

To improve the significance of the proposed conceptual framework, a number of suggestions for future studies can be outlined. First, further research should explain in more detail whether the described resilience factors can be assigned to a common factor, which may help to achieve a more concrete operationalization of the construct of resilience. Following this concrete operationalization, a standardized set of resilience measures including all relevant aspects of resilience should be developed, which should in turn improve the comparability of findings. Second, the proposed conceptual framework should be verified by examining a specific sample of perimenopausal women. Only then can it be tested whether this conceptual framework can actually be applied to women during the perimenopause. Third, considering that the menopausal transition is a bio-psycho-social process [80], future research should include the assessment of biological resilience markers while investigating factors influencing the menopausal transition. Thus, in a next step, the conceptual framework may be transformed into a bio-psycho-social model of perimenopausal resilience.

In conclusion, the main finding of this review is that there are specific resilience factors during the perimenopause. These resilience factors seem to have a positive effect on

the experience of menopausal symptoms and are associated with psychological adjustment during the menopausal transition.

Contributors

Hannah Süss was responsible for conception, acquisition of data, interpretation of data, and drafting of the manuscript.

Ulrike Ehlert was responsible for conception, interpretation of data, and revision of the manuscript.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

[1] G. Greer, The change: Women, ageing and the menopause., Bloomsbury Publishing

Inc, London, 2018.
[2] L. Jaspers, N.M.P. Daan, G.M. Van Dijk, T. Gazibara, T. Muka, K.X. Wen, C. Meun, M.C. Zillikens, J.E. Roeters Van Lennep, J.W. Roos-Hesselink, E. Laan, M. Rees, J.S.E. Laven, O.H. Franco, M. Kavousi, Health in middle-aged and elderly women: A conceptual framework for healthy menopause, Maturitas. 81 (2015) 93–98. doi:10.1016/j.maturitas.2015.02.010.
[3] J.G. Greene, Constructing a standard climacteric scale, Maturitas. 29 (1998) 25–31. doi:10.1016/S0378-5122(98)00025-5.
[4] M. Rees, Management of the menopause: Integrated health-care pathway for the menopausal woman, Menopause Int. 17 (2011) 50–54. doi:10.1258/mi.2011.011013.
[5] E.W. Freeman, K. Sherif, Prevalence of hot flushes and night sweats around the world: A systematic review, Climacteric. 10 (2007) 197–214. doi:10.1080/13697130601181486.
[6] D. Becker, J. Lomranz, A. Pines, D. Shmotkin, E. Nitza, G. BennAmitay, R. Mester, Psychological distress around menopause., Psychosomatics. 42 (2001) 252–257. doi:10.1176/appi.psy.42.3.252.
[7] C. Faravelli, M. Alessandra Scarpato, G. Castellini, C. Lo Sauro, Gender differences in depression and anxiety: The role of age, Psychiatry Res. 210 (2013) 1301–1303. doi:10.1016/j.psychres.2013.09.027.
[8] C.N. Soares, Depression and Menopause: Current Knowledge and Clinical Recommendations for a Critical Window, Psychiatr. Clin. North Am. 40 (2017) 239–254. doi:10.1016/j.psc.2017.01.007.
[9] L. Muslić, N. Jokić-Begić, The experience of perimenopausal distress: Examining the role of anxiety and anxiety sensitivity, J. Psychosom. Obstet. Gynecol. 37 (2016) 26–33. doi:10.3109/0167482X.2015.1127348.
[10] L.W.F. Maartens, J.A. Knottnerus, V.J. Pop, Menopausal transition and increased depressive symptomatology: a community based prospective study., Maturitas. 42 (2002) 195–200. doi:10.1016/S0378-5122(02)00038-5.
[11] J.T. Bromberger, K.A. Matthews, L.L. Schott, S. Brockwell, N.E. Avis, H.M. Kravitz, S.A. Everson-Rose, E.B. Gold, M.F. Sowers, J.F. Randolph, Depressive symptoms during the menopausal transition: The Study of Women's Health Across the Nation (SWAN), J. Affect. Disord. 103 (2007) 267–272. doi:10.1016/j.jad.2007.01.034.
[12] O.P. Almeida, K. Marsh, L. Flicker, M. Hickey, M. Sim, A. Ford, Depressive symptoms in midlife: The role of reproductive stage, Menopause. 23 (2016) 669–675. doi:10.1097/GME.0000000000000598.
[13] Z. Gibbs, S. Lee, J. Kulkarni, Factors Associated with Depression During the Perimenopausal Transition, Women's Heal. Issues. 23 (2013) e301–e307. doi:10.1016/j.whi.2013.07.001.
[14] E.M. Steinberg, D.R. Rubinow, J.J. Bartko, P.M. Fortinsky, N. Haq, K. Thompson, P.J. Schmidt, A cross-sectional evaluation of perimenopausal depression, J. Clin. Psychiatry. 69 (2008) 973–980. doi:10.4088/JCP.v69n0614.
[15] J.T. Bromberger, L. Schott, H.M. Kravitz, H. Joffe, Risk factors for major depression during midlife among a community sample of women with and without prior major depression: Are they the same or different?, Psychol. Med. 45 (2015) 1653–1664. doi:10.1017/S0033291714002773.
[16] R. Muharam, M.W. Setiawan, M. Ikhsan, H.E. Rizkinya, K. Sumapraja, Depression and its link to other symptoms in menopausal transition, Middle East Fertil. Soc. J. 23 (2018) 19–22. doi:10.1016/j.mefs.2017.08.003.
[17] L.S. Cohen, C.N. Soares, A.F. Vitonis, M.W. Otto, B.L. Harlow, Risk for New Onset of Depression During the Menopausal Transition, Arch. from Gen. Psychiatry. 63 (2006) 385–390. doi:10.1001/archpsyc.63.4.385.

[18] L. Brown, C. Bryant, F.K. Judd, Positive well-being during the menopausal transition: A systematic review, Climacteric. 18 (2015) 456–469. doi:10.3109/13697137.2014.989827.
[19] P. Chedraui, F.R. Pérez-López, G. Schwager, H. Sánchez, W. Aguirre, N. Martínez, O. Miranda, M.S. Plaza, C. Astudillo, J. Narváez, J.C. Quintero, B. Zambrano, Resilience and related factors during female Ecuadorian mid-life, Maturitas. 72 (2012) 152–156. doi:10.1016/j.maturitas.2012.03.004.
[20] J.J. Cutuli, A.S. Masten, Resilience, in: S. Lopez (Ed.), Encycl. Posit. Psychol., Wiley-Blackwell: West Sassex, 2009: pp. 837–843.
[21] K. Tusaie, J. Dyer, Resilience: A Historical Review, Holist. Nurs. Pract. 18 (2004) 3–10.
[22] H. Süss, S. Fischer, Resilience: Measurement, in: M.D. Gellman, J.R. Turner (Eds.), Encycl. Behav. Med., Springer, New York, in press.
[23] J. Alder, C. Urech, Psychotherapie in der Frauenheilkunde, Hogrefe, Göttingen, 2014.
[24] G. Mishra, D. Kuh, Perceived change in quality of life during the menopause, Soc. Sci. Med. 62 (2006) 93–102. doi:10.1016/j.socscimed.2005.05.015.
[25] P.R. Steffen, Spirituality and Severity of Menopausal Symptoms in a Sample of Religious Women, J. Relig. Health. 50 (2011) 721–729. doi:10.1007/s10943-009-9271-9.
[26] P.J. Schmidt, J.H. Murphy, N. Haq, D.R. Rubinow, M.A. Danaceau, Stressful life events, personal losses, and perimenopause-related depression, Arch Womens Ment Heal. 7 (2004) 19–26. doi:10.1007/s00737-003-0036-2.
[27] M.L. Caltabiano, M. Holzheimer, Dispositional factors, coping and adaptation during menopause, Climacteric. 2 (1999) 21–28. doi:10.3109/13697139909025559.
[28] F. Jafary, K. Farahbakhsh, A. Shafiabadi, A. Delavar, Quality of life and menopause: Developing a theoretical model based on meaning in life, self-efficacy beliefs, and body image, Aging Ment. Heal. 15 (2011) 630–637. doi:10.1080/13607863.2010.548056.
[29] R.Y. Abdelrahman, L.A. Abushaikha, M.A. Al-Motlaq, Predictors of psychological well-being and stress among Jordanian menopausal women, Qual. Life Res. 23 (2014) 167–173. doi:10.1007/s11136-013-0464-z.
[30] B. Jacobsen, Invitation to existential psychology: A psychology for the unique human being and its applications in therapy., John Wiley & Sons, London, 2008.
[31] S. Elavsky, E. McAuley, Personality, menopausal symptoms, and physical activity outcomes in middle-aged women, Pers. Individ. Dif. 46 (2009) 123–128. doi:10.1016/j.paid.2008.09.014.
[32] P. Extremera, N., & Fernández-Berrocal, Relation of perceived emotional intelligence and health-related quality of life of middle-aged women., Psychol. Rep. 91 (2002) 47–59. doi:10.1097/01.sla.0000186337.83407.ec.
[33] R. Bauld, R.F. Brown, Stress, psychological distress, psychosocial factors, menopause symptoms and physical health in women, Maturitas. 62 (2009) 160–165. doi:10.1016/j.maturitas.2008.12.004.
[34] P.J. Coronado, A. Oliva, M. Fasero, C. Piñel, M.A. Herraiz, F.R. Perez-Lopez, Resilience and related factors in urban, mid-aged Spanish women, Climacteric. 18 (2015) 867–872. doi:10.3109/13697137.2015.1045483.
[35] A.A. Deeks, M.P. McCabe, Well-being and menopause: An investigation of purpose in life, self-acceptance and social role in premenopausal, perimenopausal and postmenopausal women, Qual. Life Res. 13 (2004) 389–398. doi:10.1023/B:QURE.0000018506.33706.05.
[36] K.D. Neff, The Development and Validation of a Scale to Measure Self-Compassion, Self Identity. 2 (2003) 223–250. doi:10.1080/15298860309027.

[37] M.R. Leary, E.B. Tate, C.E. Adams, A.B. Allen, J. Hancock, Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly, J. Pers. Soc. Psychol. 92 (2007) 887–904. doi:10.1037/0022-3514.92.5.887.

[38] L. Brown, C. Bryant, V.M. Brown, B. Bei, F.K. Judd, Self-compassion weakens the association between hot flushes and night sweats and daily life functioning and depression, Maturitas. 78 (2014) 298–303. doi:10.1016/j.maturitas.2014.05.012.

[39] S. Elavsky, Physical activity, menopause, and quality of life: The role of affect and self-worth across time, Menopause. 16 (2009) 265–271. doi:10.1097/gme.0b013e31818c0284.

[40] B. Ayers, M. Forshaw, M.S. Hunter, The impact of attitudes towards the menopause on women's symptom experience: A systematic review, Maturitas. 65 (2010) 28–36. doi:10.1016/j.maturitas.2009.10.016.

[41] H.B. Bosworth, L.A. Bastian, B.K. Rimer, I.C. Siegler, Coping styles and personality domains related to menopausal stress, Women's Heal. Issues. 13 (2003) 32–38. doi:10.1016/S1049-3867(02)00192-5.

[42] B.V. Kafanelis, M. Kostanski, P.A. Komesaroff, L. Stojanovska, Being in the script of menopause: Mapping the complexities of coping strategies, Qual. Health Res. 19 (2009) 30–41. doi:10.1177/1049732308327352.

[43] K.G. Barbee, G.M. Timmerman, Emotional Eating, Nonpurge Binge Eating, and Self-Efficacy in Healthy Perimenopausal Women, J. Holist. Nurs. 33 (2015) 298–307. doi:10.1177/0898010115569574.

[44] L. Brown, C. Bryant, V. Brown, B. Bei, F. Judd, Investigating how menopausal factors and self-compassion shape well-being: An exploratory path analysis, Maturitas. 81 (2015) 293–299. doi:10.1016/j.maturitas.2015.03.001.

[45] E. Guérin, G. Goldfield, D. Prud'homme, Trajectories of mood and stress and relationships with protective factors during the transition to menopause: results using latent class growth modeling in a Canadian cohort, Arch. Womens. Ment. Health. 20 (2017) 733–745. doi:10.1007/s00737-017-0755-4.

[46] E.C. Klohnen, E.A. Vandewater, A. Young, Negotiating the middle years: Ego-resiliency and successful midlife adjustment in women, Psychol. Aging. 11 (1996) 431–442. doi:10.1037/0882-7974.11.3.431.

[47] A.K. Koch, S. Rabsilber, R. Lauche, S. Kümmel, G. Dobos, J. Langhorst, H. Cramer, The effects of yoga and self-esteem on menopausal symptoms and quality of life in breast cancer survivors—A secondary analysis of a randomized controlled trial, Maturitas. 105 (2017) 95–99. doi:10.1016/j.maturitas.2017.05.008.

[48] V. Mauas, D.C. Kopala-Sibley, D.C. Zuroff, Depressive symptoms in the transition to menopause: The roles of irritability, personality vulnerability, and self-regulation, Arch. Womens. Ment. Health. 17 (2014) 279–289. doi:10.1007/s00737-014-0434-7.

[49] L.M. McAndrew, M.A. Napolitano, A. Albrecht, N.C. Farrell, B.H. Marcus, J.A. Whiteley, When, why and for whom there is a relationship between physical activity and menopause symptoms, Maturitas. 64 (2009) 119–125. doi:10.1016/j.maturitas.2009.08.009.

[50] S.M. Reece, G.E. Harkless, Perimenopausal health self-efficacy among hispanic caribbean and non-hispanic white women, Health Care Women Int. 27 (2006) 223–237. doi:10.1080/07399330500506519.

[51] F. Reynolds, Exploring self-image during hot flushes using a semantic differential scale: Associations between poor self-image, depression, flush frequency and flush distress, Maturitas. 42 (2002) 201–207. doi:10.1016/S0378-5122(02)00082-8.

[52] K. Smith-DiJulio, N.F. Woods, E.S. Mitchell, Well-Being During the Menopausal Transition and Early Postmenopause. A Within-Stage Analysis, Women's Heal. Issues. 18 (2008) 310–318. doi:10.1016/j.whi.2008.03.001.

[53] Y. Zhang, X. Zhao, R. Leonhart, M. Nadig, A. Hasenburg, M. Wirsching, K. Fritzsche, A cross-cultural comparison of climacteric symptoms, self-esteem, and perceived social support between Mosuo women and Han Chinese women, Menopause. 23 (2016) 784–791. doi:10.1097/GME.0000000000000621.
[54] S. Elavsky, E. McAuley, Exercise and self-esteem in menopausal women: A randomized controlled trial involving walking and yoga, Am. J. Heal. Promot. 22 (2007) 83–92. doi:10.4278/0890-1171-22.2.83.
[55] P. Chedraui, F.R. Pérez-López, B. Morales, L. Hidalgo, Depressive symptoms in climacteric women are related to menopausal symptom intensity and partner factors, Climacteric. 12 (2009) 395–403. doi:10.1080/13697130902718150.
[56] E. Vanderbilt-Adriance, D.S. Shaw, Conceptualizing and Re-Evaluating Resilience Across Levels of Risk, Time, and Domains of Competence, Clin. Child Fam. Psychol. Rev. 11 (2008) 30–58. doi:10.1007/s10567-008-0031-2.
[57] S. Luthar, D. Cicchetti, B. Becker, The Construct of Resilience: A Critical Evaluation and Guidlines for Future Work, Child Dev. 71 (2000). doi:10.1111/1467-8624.00164.
[58] D.M. Davydov, R. Stewart, K. Ritchie, I. Chaudieu, Resilience and mental health, Clin. Psychol. Rev. 30 (2010) 479–495. doi:10.1016/j.cpr.2010.03.003.
[59] A. Antonovsky, Health, stress, and coping: new perspectives on mental and physical well-being, Jossey-Bass, San Francisco, 1979.
[60] S.C. Kobasa, Stressful life events, personality, and health: An inquiry into hardiness, J. Pers. Soc. Psychol. 37 (1979) 1–11. doi:10.1037/0022-3514.37.1.1.
[61] G. Windle, K.M. Bennett, J. Noyes, A methodological review of resilience measuremengregory bateson ecology mindt scales., Health Qual. Life Outcomes. 9 (2011) 2–18. doi:10.1186/1477-7525-9-8.
[62] M. Avis, N. E., Stellato, R., Crawford, S., Bromberger, J., Ganz, P., Cain, V., & Kagawa-Singer, Is there a menopausal syndrome? Menopausal status and symptoms across racial/ethnic groups, Soc. Sci. Med. 52 (2001) 345–356. doi:10.1016/S0277-9536(00)00147-7.
[63] E.B. Gold, A. Colvin, N. Avis, J. Bromberger, G.A. Greendale, L. Powell, B. Sternfeld, K. Matthews, Longitudinal analysis of the association between vasomotor symptoms and race/ethnicity across the menopausal transition: Study of women's health across the nation, Am. J. Public Health. 96 (2006) 1226–1235. doi:10.2105/AJPH.2005.066936.
[64] M. Ungar, Resilience across Cultures, Br. J. Soc. Work. 38 (2006) 218–235. doi:10.1093/bjsw/bcl343.
[65] H. Liu, C. Zhang, Y. Ji, L. Yang, Biological and Psychological Perspectives of Resilience: Is It Possible to Improve Stress Resistance?, Front. Hum. Neurosci. 12 (2018) 1–12. doi:10.3389/fnhum.2018.00326.
[66] D.S. Charney, Psychobiological Mechanism of Resilience and Vulnerability: Implications for Successful Adaptation to Extreme Stress, Am. J. Psychiatry. 161 (2004) 195–216. doi:10.1176/appi.ajp.161.2.195.
[67] A. Feder, E.J. Nestler, D.S. Charney, J. Shoemaker, A. Manuscript, A. Feder, E.J. Nestler, D.S. Charney, Psychobiology and molecular genetics of resilience, Nat. Rev. Neurosci. 10 (2013) 446–457. doi:10.1038/nn.3234.Neurobiology.
[68] S.J. Russo, J.W. Murrough, M.H. Han, D.S. Charney, E.J. Nestler, Neurobiology of Resilience, Nat. Rev. Neurosci. 15 (2012) 1475–1484. doi:10.1038/nn.3234.Neurobiology.
[69] E.W. Freeman, M.D. Sammel, D.W. Boorman, R. Zhang, Longitudinal pattern of depressive symptoms around natural menopause, JAMA Psychiatry. 71 (2014) 36–43. doi:10.1001/jamapsychiatry.2013.2819.
[70] J.T. Bromberger, C.N. Epperson, Depression During and After the Perimenopause:

Impact of Hormones, Genetics, and Environmental Determinants of Disease, Obstet. Gynecol. Clin. North Am. 45 (2018) 663–678. doi:10.1016/j.ogc.2018.07.007.

[71] R. Yehuda, J.D. Flory, Differentiating Biological Correlates of Risk, PTSD, and Resilience Following Trauma Exposure, J. Trauma. Stress. 20 (2007) 435–447. doi:10.1002/jts.

[72] J.A. Sturgeon, A.J. Zautra, Resilience: A new paradigm for adaptation to chronic pain, Curr. Pain Headache Rep. 14 (2010) 105–112. doi:10.1007/s11916-010-0095-9.

[73] B. White, S. Driver, A.M. Warren, Resilience and Indicators of Adjustment During Rehabilitation From a Spinal Cord Injury, Rehabil. Psychol. 55 (2010) 23–32. doi:10.1037/a0018451.

[74] J. Maltby, L. Day, S. Hall, Refining trait resilience: Identifying engineering, ecological, and adaptive facets from extant measures of resilience, PLoS One. 10 (2015) 1–27. doi:10.1371/journal.pone.0131826.

[75] C.C. Hiew, T. Mori, M. Shimizu, M. Tominaga, Measurement of resilience development: Preliminary results with a State-Trait resilience inventory., J. Learn. Curric. Dev. 1 (2000) 111–117.

[76] Q.Q. Tiet, H.R. Bird, M. Davies, C. Hoven, P. Cohen, P.S. Jensen, S. Goodman, Adverse life events and resilience, J. Am. Acad. Child Adolesc. Psychiatry. 37 (1998) 1191–1200. doi:10.1097/00004583-199811000-00020.

[77] O. Friborg, O., Barlaug, D., Martinussen, M., Rosenvinge, J. H., & Hjemdal, Resilience in relation to personality and intelligence., Int. J. Methods Psychiatr. Res. 14 (2005) 29–42. doi:10.1002/mpr.15.

[78] E.E. Werner, Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study, Dev. Psychopathol. 5 (1993) 503–515. doi:10.1017/S095457940000612X.

[79] M.S. Hunter, J. Chilcot, Testing a cognitive model of menopausal hot flushes and night sweats, J. Psychosom. Res. 10 (2013) 307–312. doi:10.1037/0022-3514.70.3.591.

[80] M. Hunter, M. Rendall, Bio-psycho-socio-cultural perspectives on menopause, Best Pract. Res. Clin. Obstet. Gynaecol. 21 (2007) 261–274. doi:10.1016/j.bpobgyn.2006.11.001.